



Fact Sheet

Advanced Systems

Advanced Systems develops new system concepts and key components to support two-year block upgrades and capabilities for the Ballistic Missile Defense System.

- **Project Hercules:** develops robust detection, tracking, and discrimination algorithms useful against targets in all phases of flight.
- **Early Launch Detection and Tracking:** provides early threat launch detection, tracking and target classification, improving the system's response time. This technology enhances the effectiveness of the Kinetic Energy Intercept and Airborne Laser.
- **Airship Enabling Technologies:** designs a lighter-than-air High Altitude Airship prototype to demonstrate an unmanned, untethered, gas-filled solar-powered airship. The airship will be used for communications, environmental monitoring, missile warnings, and target acquisition.
- **Space-Based Passive Surveillance:** space-qualified infrared sensors will enhance the missile defense system's performance by improving detection, tracking and target selection capabilities.
- **Radar System Technology:** improves defenses against advanced countermeasures by integrating radar system upgrades to the Ballistic Missile Defense System program elements.
- **Multiple Kill Vehicle (Previously Miniature Kill Vehicle):** deploys multiple, small kill vehicles from a single carrier vehicle. The integrated payload will be designed to fit on existing and future interceptor boosters. Result: capable of engaging multiple targets from a single launcher.
- **Laser Technology:** advanced technologies in the key areas of military-class laser devices, beam control, adaptive optics, detectors and laser radar system components
- **Innovation and Evaluation Program:** identifies and develops innovative concepts, stimulates technology innovation and uses breakthroughs in science to offer enhanced technical improvements to the Ballistic Missile Defense System. Divided into three teams to "mine the science, practice the science, and practice and integrate the science."
- **Technology Applications Program:** assists Missile Defense Agency-funded researchers at universities, private companies and government research organizations in the commercialization of their technologies. This results in minimized costs for commercial-off-the-shelf components that meet missile defense requirements.

